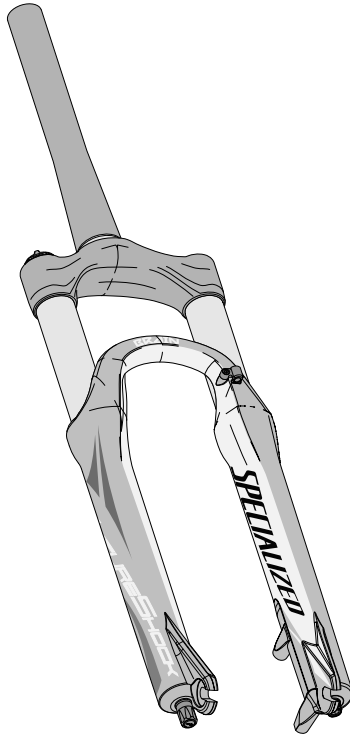




SPECIALIZED[®]

AFR S120 FORK OWNER'S MANUAL



STUMPJUMPER / SAFIRE

SPECIALIZED BICYCLE COMPONENTS

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INTRODUCTION

Congratulations on your purchase and welcome to the finest line of suspension bikes available!

Your bike is equipped with a Specialized AFR suspension unit. Please read the following information for proper setup and service before riding. Please contact Specialized at (877) 808-8154 for further information or questions, and visit www.specialized.com/bc/SBCDownloads.jsp for periodic tech updates.

Please read the following warnings. Because failure to follow any warnings may result in a catastrophic failure, resulting in serious personal injury or death, this phrase may not be repeated in connection with each Warning.



WARNING! Make sure you have, review, and understand the warnings, instructions, and content of the manuals for your bicycle.

SERVICE AND MODIFICATIONS

As a first point of contact for all warranty or service issues, please refer to your local authorized Specialized dealer. **All internal fork maintenance must be performed by an authorized Specialized Service Center.** For a list of service centers, please visit www.specialized.com, e-mail at customerservice@specialized.com or call (877) 808-8154.

Technological advances have made frames and forks more complex, and the pace of innovation is increasing. It is impossible for this manual or the accompanying manuals to provide all of the information required to properly repair and/or maintain your fork. In order to help minimize the chances of an injury, it is critical to have work performed by an authorized Specialized Service Center.

Do not modify your fork or bicycle. Any modifications, non-authorized replacement parts or improper service will void the warranty and can cause damage to the fork unit and/or frame and can cause injury to the rider.

Proper maintenance is critical to the optimal performance and lifespan of the fork. Please follow the service schedule recommended in this manual. If your fork ever makes any unusual noises or loses air/oil, stop riding immediately and have the fork inspected by your local authorized Specialized dealer or by an authorized Specialized Service Center.



WARNING! Specialized forks are pressurized with an air charge and require special tools to recharge. The charged section does not need to be opened to perform any cleaning or lubricating. Because of explosive force, do not open the charged section of the fork. Attempting to open the charged section of the fork is dangerous and will void the warranty.



WARNING! Service on Specialized forks requires special knowledge and tools. Specialized recommends that all service and repairs be performed by an authorized Specialized Service Center.



WARNING! Never modify your fork or frame in any way. Do not sand, drill, fill, or remove parts. Do not install incompatible after-market suspension parts. Riding with a damaged, broken, malfunctioning or improperly modified frame or fork, can cause you to lose control and fall.

Caution: Any modification of your frame or fork means that your bike no longer meets our specifications and therefore voids your warranty.



WARNING! Specialized forks are only for use on designated Specialized bikes. Do not use the S120 fork on any other bike. Use of these forks on any non-recommended bikes can result in poor performance, damage to the fork and/or bike and will void the warranty.

TOOLS NEEDED:

4/5/6mm Allen key (socket-style and wrench-style)

Torque wrench

FORK TERMINOLOGY

FORK SAG: The amount the fork compresses when the rider's body weight is applied to the fork while sitting on the bike. Please refer to each bike model's fork setup chart to determine correct air pressure and corresponding sag percentage.

COMPRESSION DAMPING: Shim controlled damping system for slow to medium shaft speeds, controls the resistance felt from the oil damping when compressing the fork for a firm ride feel, offering greater cornering and braking performance.

BRAIN FADE: Opens and closes a separate bleed circuit that allows a small amount of fluid to pass freely by the inertia valve controlled circuit. For the rider, this adjustment will reduce the firmness of the shock's platform at ride height.

REBOUND DAMPING: Controls the rate of return of the fork after compression.

GENERAL MAINTENANCE

Maintenance Schedule	New	Every ride	Every 250 hrs
Set sag (check air pressure)	✓	✓	
WIPE CLEAN SEALS, STANCHION TUBES		✓	
Send to service center for inspection and oil change			✓

CAUTION! Be sure to wipe the fork legs/seals clean after every ride to prevent wear and damage to the fork. Failure to follow this caution will void the warranty.

Wash your fork with soap and water. If you ride in muddy conditions, clean and service your fork more frequently. Do not use a pressure washer!

Inspect the brakes, quick-release and headset before each ride to ensure proper tightness. Please refer to your Bicycle Owner's manual for further information.

When your fork is cycled, grease will purge from the seals. This is normal, it is not the oil leaking from the fork. Thin oil lines on the fork stanchion are a good sign, it means your seals are well lubricated, which reduces wear.

WARRANTY

For warranty provisions, please visit www.specialized.com.

FORK INSTALLATION

S120 forks with carbon steerer tubes are specifically designed for the Stumpjumper and Safire carbon OEM frames with a 1 1/2" (52mm) lower bearing and a 1 1/8" (42mm) upper bearing. Each steerer tube is already cut to fit the specific frame size it was paired with.

In the event that the fork steerer tube needs to be cut down further or any maintenance needs to be done to the fork, please read the following instructions. If you have any doubt regarding your mechanical ability and/or installation of this product, visit your local authorized dealer. Specialized recommends that the stem be installed on the fork using a torque wrench, by a qualified mechanic.



Warning! Recommended torques in this guide are specific for this Specialized product. Consult the owners manual for the mating component's recommended torque. Always use the lower torque recommendation.

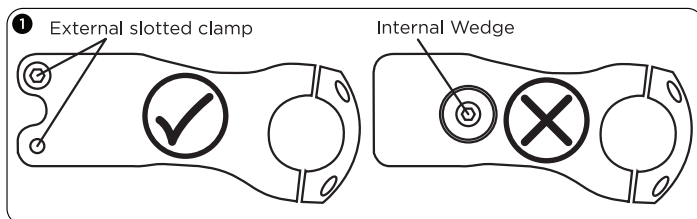
PREPARING THE COMPONENTS

Inspect the fork and stem to ensure that there are no burrs or sharp edges that can damage the surface in contact with each other. Remove any burrs or sharp edges using fine grit sandpaper. All edges in contact with the steerer tube should be rounded out to eliminate any stress points.



Warning! Burrs and sharp edges can damage the carbon and alloy surfaces of the components. Any deep scratches or gouges in the stem or fork can weaken the components resulting in failure, causing serious personal injury or death.

NOTE: Specialized only recommends external slotted clamp style stems. Internal wedge clamp style stems can damage the steerer tube if improperly installed. (fig.1)



PRE-INSTALLING THE FORK

1. The lower bearing race is permanently pre-installed at the factory. Apply a small amount of grease to the lower bearing race surface. Avoid getting grease on the stem interface region of the steerer tube.
2. Install the bearings in the head tube, with a light coat of grease on the bearing surfaces. The bearings are friction fit and can be installed by hand.
3. Place the fork in the frame, followed by the headset compression ring, headset top cap and the desired height of carbon cone and/or headset spacers.

NOTE: Do not install more than 40mm (1.5") stack height of headset spacers. Exceeding this limit can compromise the strength of the steerer tube (See fig.1).

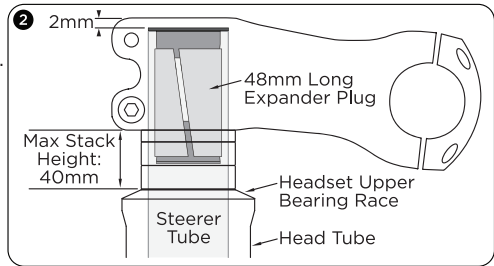
NOTE: Clean the stem interface surface of the steerer tube (above the headset spacers) with isopropyl alcohol or a similar type of degreaser before installing the stem.

4. Pre-install the stem (do not apply a high torque without the 48mm Long Expander Plug installed).

NOTE: Unless the desired stem height is already determined, it is recommended that the pre-installation of the fork and stem be done with the maximum allowed stack height (40mm) to allow the greatest range of adjustability. Spacers can be placed above or below the stem to adjust your position. Once a more precise stem height is determined, a second cut can be made to eliminate any spacers that may have been placed above the stem to achieve the desired position.

CUTTING THE FORK STEERER TUBE

1. Once the initial stem height is achieved, make a mark on the steerer tube at the top of the stem. Place the cutting line 3mm below the mark to allow for the space needed for the 1mm lip of the expander plug. The end result is 2mm of space. (Fig. 2)



2. Wrap the area where you intend to cut the fork with several layers of masking tape. This will limit fraying of the fibers, resulting in a cleaner cut. Once you've wrapped the layers of tape, determine the precise location of the desired cut with a pen mark on the tape. To avoid fraying the composite fibers, it is recommended that a carbide grit toothless saw blade be used. A fine tooth (36 teeth) saw blade is also acceptable. Double check all measurements to make sure the steerer tube will not be cut too short. It's easier to measure twice than to buy a new fork.

NOTE: It is very important that the steerer tube is cut straight. For best results, use a steerer tube cutting guide tool.

3. Once the steerer tube is cut to the desired length, remove all burrs at the top of the steerer tube by rounding out the edge with emery paper or a fine grit sand paper. Only sand edge, not clamping surface! Wipe off all excess dust. **Be sure not to breathe carbon dust!**

For additional information on carbon fiber preparation, please visit the tech section at www.specialized.com

INSTALLING THE FORK

1. Install the 48mm Long Expander Plug (fig.2). Recommended torque is 100 in-lbf (11.3 N-m).



Warning! The S120 steerer tube requires the use of the RED (22.5mm O.D.) Specialized 48mm Long Expander Plug (fig.2) supplied with the fork. Do not use a star nut, it can damage the inside surface of the steerer tube. Damage to the steerer tube can result in failure, causing serious personal injury or death.

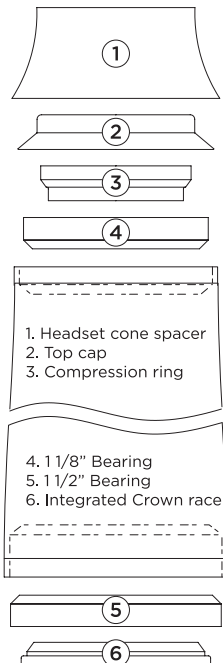
2. Place the fork back into the head tube, clean the stem interface of the steerer tube with isopropyl alcohol.
3. Place the desired amount of headset spacers to achieve proper stem height, followed by the stem and the top preload cap.

NOTE: Do not twist the stem onto the steerer tube. This can result in damage to the surface, which can render the fork unsafe.


4. Install the disc brake and brake housing guide on the fork. make sure the brake housing routing doesn't touch the tire when the fork is fully compressed and that it doesn't interfere with the controls on the handlebar when rotated. Do not overtighten the bolts, refer to the disc brake manufacturer's owner's manual for recommended torque specifications.

5. Install the front wheel and adjust the brake to allow the rotor to spin freely.

Fork install steps continued on page 8.



6. Adjust the headset to eliminate any free play, make sure that the fork rotates freely. Align the stem with the fork. Tighten the stem's upper and lower steerer clamp bolts in an alternating pattern. Increase torque in 5 in-lbf (0.56 N-m) increments. Recommended torque applied to the steerer tube is 75 in-lbf (8.5 N-m). Refer to your stem owner's manual for specific torque spec recommendations for the stem bolts.

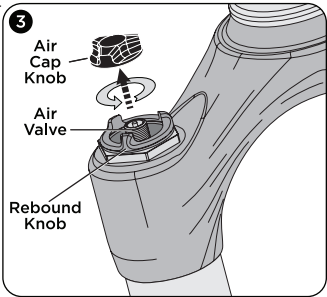


Warning! Damage to composite is difficult to visually identify. If the external composite surface is dented, frayed, gouged, deeply scratched, fractured, chipped or otherwise damaged, the component should be replaced. If a fork has suffered a crash or impact, Even if no damage is visible, Specialized or an authorized Specialized dealer should inspect the product.


SHOCK PUMP

Specialized offers a shock pump (4727-3010), to add or release air pressure from your Specialized fork. The Fox shock pump is also recommended. Follow the steps below:


1. Remove the air cap knob from the top of the right fork leg (Fig.3).
2. Thread the pump's valve chuck onto the fork's schraeder valve (holding the rebound knob so it won't turn), until pressure registers on the pump gauge. Do not over tighten the valve chuck. If there's no pressure in the fork, no pressure will register on the pump gauge.
3. Stroke the pump until you've reached the desired pressure (see air chart for pressure ranges). Pressure can be decreased by depressing the release valve button on the pump body.



When the valve chuck is removed, air pressure will be released. This air is NOT from the fork. It's leftover air from the pump hose. When the pump is reattached to the valve, pressure in the fork will decrease to fill the pump hose. This will lower pressure approximately 10 PSI. (i.e. a fork set at 100 PSI will show approximately 90 PSI when the pump's hose is re-installed on the fork, as the hose is refilled by pressure in the fork.)



WARNING! Fork pressure range is 40 to 120 PSI. do not exceed 120 PSI. Exceeding the recommended limit can result in damage to the fork.



WARNING! Avoid lowering pressure too far and bottoming out too often and too hard, this can result in fork damage.

RIDER WEIGHT		LBS (KG)	100 (45)	110 (50)	120 (54)	130 (60)	140 (64)	150 (68)	160 (73)	170 (77)	180 (82)	190 (86)	200 (91)	210 (95)	220 (100)	230 (104)	>240 (109)
\$120 Sag (%): 18-33 Sag (mm): 26-34 Travel (mm): 120	(AFR PSI):	40	45	50	55	60	65	70	75	80	85	90	95	100	110	120	
	Rebound (Rotations from full slow):	2				1.5				1							
	Compression (Brain):	Loose gravel / Muddy: 1 turn out from full firm Downhill / Technical: 5 clicks out from full firm All other terrain: Full firm															



= Faster rebound / Softer compression



= Slower rebound / Firmer compression

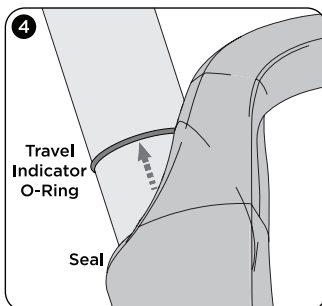
NOTE: Air pressures and rebound/compression settings are suggested recommendations only, to provide a starting point for the rider. Adjust for preference / riding style.

S120 FORK SETUP

SETTING AIR PRESSURE AND SAG

Setting the air pressure is crucial to getting the best performance from your fork. To achieve proper suspension balance, set the shock pressure before setting the fork pressure. The following air chart is designed to get you in the approximate sag range.

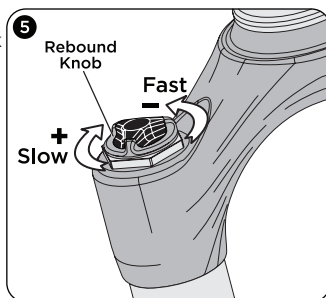
1. Use a high-pressure shock pump to add air. Sag is based on a % of stroke of the fork. Set sag according to the chart as a starting point, then adjust for preference, terrain and riding technique.
2. A travel indicator o-ring comes pre-installed on the right stanchion tube. Push the indicator o-ring down to the seal, gently sit on the saddle without bouncing (apply rider weight only to the bike) to compress the fork and displace the indicator, then measure the distance between the fork seal and the indicator (sag). The rider should be in full ride gear and sitting in a normal riding position when setting sag.
3. To maximize performance, monitor travel for the first few rides, the goal is to reach 90-100% (108-120mm) of travel a few times during a ride without harsh bottoming. If full travel is not being reached on occasion during a normal ride, lower pressure until it does.



ADJUSTING REBOUND

The red knob (top of right leg) controls the rebound damping, the rate which the fork returns after the fork has been compressed.

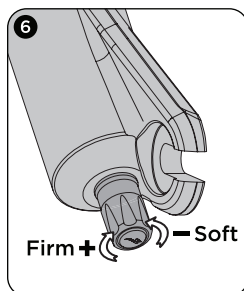
- Turn the knob clockwise for slower rebound (slower speeds, bigger hits).
- Turn the knob counter-clockwise for faster rebound (higher speeds, small bumps, more traction).



ADJUSTING COMPRESSION (BRAIN FADE)

The blue knob (bottom of right leg) adjusts compression, which helps control cornering and braking stability, as well as control fork bottom-out.

- Turn the knob clockwise for a firmer, more efficient ride. Full clockwise is the maximum damping setting.
- Turn the knob counter-clockwise for a softer, more supple setting.



NOTE: For additional shock setup information, please visit the Tech Lab at www.specialized.com